

Amendments to the Drawing:

In Figure 1, missing numerals 29, 36 and 57 have been added to the equipment depicted therein. Attached is Replacement Figure 1.

REMARKS

This communication is in response to the Examiner's Office Action dated October 19, 2004.

Applicants note that claims 19-27 and 29-38 are withdrawn without prejudice looking forward to filing a divisional of these claims.

The numeral "55" has been amended to correct an error and to recite --57--, the correct numeral at page 11, line 24.

The specification has been amended to correct minor informalities and to respond to the rejections in paragraphs 14 and 15 under 35 U.S.C. §112.

The Abstract has been amended in light of the Examiner's comments.

Numerals 29, 36 and 57 have been added to Figure 1.

Applicants have amended claims 1, 2, 9, 10, 13, 14, 15, 18 and have added new claims 40-68. Claims 28 and 39 have been cancelled. The amended claims no longer recite "means" language. The amended claims now include the feature that the offgases from the thermal oxidisers are rapidly quenched to a temperature below 200°C after heat exchange has occurred. Support for the amendment is found at page 11, lines 5-27. The rapid quenching of the offgases is a substantial improvement of the process and avoids production of toxin materials. New claims 40-49, 65 and 66 claim specific aspects of the rapid quenching feature now recited in claims 1 and 9. Claims 50-54, 67 and 68 are new claims. The claims are supported by the application and claims as filed are at page 9, lines 3-15 and page 11, lines 5-27.

The Examiner has rejected claims 9, 14 and 15 under 35 U.S.C. §102 over Fritz et al., U.S. Patent No. 3,918,373. Applicants respectfully traverse the rejection. Applicants assert that this anticipation rejection must fail because a clearly required feature of claim 9 is not found in the Fritz et al. disclosure.

In summary, we believe there are at least two significant reasons why the claimed invention is distinguished over the cited reference. We believe the overall process including the rapid quenching step is not recognized. While from certain literature references, it is known that as hot offgases (combustion products) are cooled slowly (naturally) through the critical temperature window of 600°C down to 200°C, dioxins can reform from the gas phase chlorine, carbon oxygen and hydrogen bearing radicals in the presence of dust particles (which give a catalytic effect to this reformation). This process is known as De-novo synthesis. Applicants

have found that the combination of treating offgases from a second oxidiser furnace and then cooling the offgases is very effective in preventing the reformation of dioxins. The combination of the oxidation and rapid quencher is not shown in either Brashears et al., U.S. Patent No. 5,164,158 or Reintjes et al., European Patent No. 155022.

With regard to Figure 1 of the Fritz et al. patent, the Fritz et al. system includes a vertical gasifier 1 with a second furnace 8 for combusting the gas and entrained contaminants delivered from gasifier 1 to furnace 8 via duct 5. A proportion of offgases from furnace 8 in duct 14 are delivered via ducts 22 and 23 to heat exchanger 24 wherein combustion air for gasifier furnace is preheated and then delivered to the gasifier furnace via line 33 and duct 4.

There is no suggestion whatever of "heat exchange means for preheating the desorbed contaminants by heat exchange with offgases from the second furnace." The portion of the Fritz et al. patent quoted by the Examiner fails to recognize that the Fritz et al. reference requires "preheating" the desorbed contaminants, a step different than the claimed invention.

Further, claim 9 requires means for conveying combustion air to said desorption chamber and to said second furnace means and to "preheat the combustion air thereby." The Examiner interprets the Fritz et al. system, an interpretation not compatible with an anticipation rejection, as Fritz et al. deliver combustion air to the second furnace 8 via duct 5 connecting the gasifier 1 to the second furnace 8. Our claim 9 specifically requires combustion air to be conveyed to the second furnace. In Fritz et al., this air is fed via line 11, but is not preheated by heat exchange with the offgas from the second furnace. No preheating appears to occur in Fritz et al. in any regard. Applicants assert that new claims 50-64 and 67-68 are allowable in view of Fritz et al. and the other references. These claims combine a preheating, precooling step and the rapid quenching combination of the gases after the thermal oxidiser. Applicants assert that this combination of steps is not taught by the previously cited art references.

The Examiner has rejected claims 1-18, 28 and 39 under 35 U.S.C. §103 over Brashears et al., U.S. Patent No. 5,164,158, in view of Reintjes et al., European Patent No. 155022. Applicants do not acquiesce in the Examiner's rejection, however, Applicants note that the claims as amended now recite the rapid quenching of offgases as recited now in claims 1, 9 and new claims 50-68. Applicants review of Brashears et al. does not show any apparent teaching that the offgases can be quenched rapidly to the recited temperature in order to avoid creating

undesirable combustion by-products as recited in the specification at page 9, lines 6-15.

Applicants assert that the claims are now allowable in light of this amendment.

Applicants invite the Examiner to review all claims in the case and to pass these claims to allowance. If the Examiner believes a telephone conference would be helpful in resolving any issues in this case, Applicants request the Examiner to call Applicants' attorney.

Respectfully submitted,

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Date

Mark DiPietro
Mark DiPietro
Reg. No. 28,707
MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, MN 55402-0903
Telephone: (612) 371-5375
E-mail: mdipietro@merchant-gould.com

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